

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

INVENTORS: **Yanien Lee, et al.** **Group No. 1761**
APPLICATION NO.: **10/715,198** **Examiner: C. Sayala**
FILED: **11/17/2003**
TITLE: **TRIPOLYPHOSPHATE PET FOOD PALATABILITY ENHANCERS**
ATTORNEY DOCKET NO.: **P27,138 USA**

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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Rule 37 C.F.R. § 1.132 Declaration of Patrick W. Moeller, Ph.D.

I, Patrick W. Moeller, Ph.D., declare and say that:

1. I am Vice-President of Research and Development for AFB International, the company acquiring the assignee of the above mentioned patent application. I have 30 years experience in food research. Thirteen of those years involved packaged consumer foods and three years involved restaurant foods. Both experiences were heavily driven by sensory test results. I also spent the last fifteen years in the flavor industry, thirteen of those years with savory flavors for human foods with some pet food applications. The last year and a half has been spent in the pet food palatant industry. I am responsible for the research programs of AFB International, including those acquired from the assignee above. I am experienced and familiar with the subject matter.

2. I am familiar with the prosecution history of U.S. Patent Application Serial No. 10/715,198 (the '198 application), at least to the extent that it is my knowledge that the application has been rejected as unpatentable in view of U.S. Patent No. 6,254,920 (the '920 patent) or U.S. Publication No. 2005/0037108 (the '108 publication) in view of U.S. Patent No. 6,099,879 (the '879 patent) and U.S. Patent 4,514,431 (the '431 patent) and further in view of U.S. Patent No. 5,186,964 (the '964 patent), U.S. Patent No. 4,215,149 (the '149 patent), and U.S. Patent No. 5,015,485 (the '485 patent). I am very familiar with these publications.

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3. The '964 patent, the '920 patent, and the '108 publication disclose pet food palatability enhancer compositions containing a pyrophosphate salt. The '108 publication is more specifically directed to the use of tetrapotassium pyrophosphate salts. The '149 patent discloses phosphate salts as pet food palatability enhancers. The '485 patent discloses coating dog biscuits with pyrophosphate salts for tartar control.

4. The '879 patent discloses treating meat products with rosemary extract and one or more tocopherols, ascorbic acid, citric acid or sodium tripolyphosphate to preserve seasoning flavor in irradiated meat for human consumption. The '431 patent discloses a flavor enhancer and seasoning composition for meat products containing from about 6 mole percent up to 50 mole percent of a phosphate and/or a monoacid phosphate and/or a diacid phosphate and/or phosphoric acid taken alone or further together with at least one tripolyphosphate, pyrophosphate or polymetaphosphate.

5. The claims of the present application are directed to methods for increasing the palatability of an extruded pet food product by spraying a liquid palatability enhancing composition including at least one sodium tripolyphosphate salt to the extruded pet food composition. The claims are also directed to liquid palatability enhancing compositions for extruded pet food, wherein the composition includes at least one sodium tripolyphosphate salt.

6. The Examiner considers the pet food palatability enhancer compositions of the present invention obvious in view of the references cited in paragraphs 3 and 4 allegedly because tripolyphosphate is an obvious variant for pyrophosphate as a pet food palatability enhancer.

7. However, the patents listed in paragraph 4 are directed to compositions used in the meat industry, where tripolyphosphates are added in order to retain water, not for palatability enhancement.

8. Further, the data presented in Table 1 below indicates that co-sprayed liquid sodium tripolyphosphate (STPP) has unexpectedly superior palatability properties. An explanation of the results is provided following Table 1.

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Table 1

Example	Control		STPP/SAPP		Preference	Cats/Days
	Flavor	Appl %	Flavor	Appl %		
1	100% PH&L Digest	2.0	Co-Spray Dried PH&L Digest with 15% STPP	2.35*	1:2.97s	23/2
2	100% PH&L Digest	2.0	Co-Spray Dried PH&L Digest with 30% STPP	2.85*	1:1.90s	21/2
3	Dry blend 70% PH&L Digest + 30% TSPP	2.0	Dry blend 70% PH&L Digest with 30% SAPP	2.0	1:1.11	20/2
4	Dry blend 70% PH&L Digest + 30% TSPP	2.0	Dry blend 70% PH&L Digest with 30% STPP	2.0	2.0s:1	23/2
5	Dry blend 70% PH&L Digest + 30% TSPP	2.0	Co-Spray Dried 70% PH&L Digest with 30% STPP	2.0	1:1.5s	22/2
5	Dry blend 70% PH&L Digest + 30% TSPP	2.0	Co-Spray Dried 70% PH&L Digest with 30% STPP	2.0	1:1.39s	21/2
5	Dry blend 70% PH&L Digest + 30% TSPP	2.0	Co-Spray Dried 70% PH&L Digest with 30% STPP	2.0	1:1.37s	24/2
6	Dry blend 70% PH&L Digest + 30% STPP	2.0	Co-Spray Dried 70% PH&L Digest with 30% STPP	2.0	1:4.95s	23/2
7	Dry blend 85% PH&L Digest + 15% TSPP	2.0	Dry blend 85% PH&L Digest with 15% STPP	2.0	3.03s:1	22/2
8	Dry blend 85% PH&L Digest + 15% TSPP	2.0	Co-Spray Dried 85% PH&L Digest with 15% STPP	2.0	1:1.04	22/2
8	Dry blend 85% PH&L Digest + 15% TSPP	2.0	Co-Spray Dried 85% PH&L Digest with 15% STPP	2.0	1.28:1	22/2
9	Dry blend 70% PH&L Digest + 30% SAPP	2.0	Co-Spray Dried 70% PH&L Digest with 30% STPP	2.0	1:1.47s	24/2
9	Dry blend 70% PH&L Digest + 30% SAPP	2.0	Co-Spray Dried 70% PH&L Digest with 30% STPP	2.0	1:1.96s	22/2
10	Liquid PH&L Digest + 8.5% TSPP	5.0	Liquid PH&L Digest + 8.5% STPP	5.0	1.2:1	22/2

* Adjusted to the equivalent 2% digest in the control sample.

Co-spray drying was conducted using the liquid mixture at pH 4-10

10. Example 3: For a base comparison of other enhancers, a flavor enhancer comprising poultry heart and liver (PH&L) digest dry blended with 30% tetrasodium pyrophosphate (TSPP) was used to coat the Standard Cat Food. This was compared with a standard Cat Food coated with a flavor enhancer comprising PH&L digest dry blended with 30% sodium acid pyrophosphate (SAPP). The consumption by the subjects of the two foods was essentially the same showing no real preference between the two.

11. Example 4: A flavor enhancer comprising PH&L digest was dry blended with 30% sodium tripolyphosphate (STPP) and used to coat the Standard Cat Food. This was compared with a standard Cat Food coated with a flavor enhancer comprising PH&L digest dry

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blended with 30% TSPP. The subject cats ate TSPP coated and STPP coated foods in a ratio of about 2 to 1.

12. Example 5: In three separate trials involving 22, 21 and 24 cats, a flavor enhancer comprising PH&L digest was co-spray dried with 30% STPP and used to coat the Standard Cat Food. This was compared with a standard Cat Food coated with a dry flavor enhancer comprising PH&L digest dry-blended with 30% TSPP. The subject cats showed a significant preference for the STPP, in direct contradiction to Example 4, in which cats showed a preference for dry blended TSPP over dry blended STPP.

13. Example 6: In a 23 cat trial, a flavor enhancer comprising PH&L digest was dry blended with 30% STPP and used to coat the Standard Cat Food. This was compared with a Standard Cat Food coated with a dry palatability enhancer comprising PH&L digest co-spray dried with 30% STPP. The subject cats displayed a strong preference for the co-spray dried STPP in a ratio of 5 to 1.

14. Example 7: A flavor enhancer comprising PH&L digest was dry blended with 15% STPP and used to coat the Standard Cat Food. This was compared with a standard Cat Food coated with a flavor enhancer comprising PH&L digest dry blended with 15% TSPP. The subject cats ate TSPP coated and STPP coated in a ratio of about 3 to 1.

15. Example 8: In two separate trials involving 22 cats each, a dry flavor enhancer comprising PH&L digest was co-spray dried with 15% STPP and used to coat the Standard Cat Food. This was compared with a standard Cat Food coated with a flavor enhancer comprising PH&L digest dry blended with 15% TSPP. The subject cats showed a greater preference for the co-spray dried STPP than in example 5 when dry blended STPP was used.

16. Example 9: A flavor enhancer comprising PH&L digest was co-spray dried with 30% STPP and used to coat the Standard Cat Food. This was compared with a standard Cat Food coated with a flavor enhancer comprising PH&L digest dry blended with 30% TSPP. In two separate tests the subject cats showed a significant preference for the STPP.

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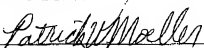
17. Example 10: A liquid flavor enhancer comprising PH&L digest and 8.5% STPP was spray-applied to coat the Standard Cat Food. This was compared with a standard Cat Food spray-coated with a liquid flavor enhancer comprising PH&L digest and 8.5% TSPP. The two products were at parity in preference testing.

18. Control: In two separate tests, a control Standard Cat Food coated only with dry animal digest was tested against a test Standard Cat Food coated with the PH&L digest co-spray dried with 15% and 30% STPP. The subject cats showed a preference for the STPP coated cat food.

19. The foregoing demonstrates that the present invention represents more than the replacement of pyrophosphate palatability enhancers with a similar material. Instead, the use of co-sprayed liquid STPP represents an inventive step over the state of art identified by the Examiner.

20. The Examiner has questioned the validity of the test protocols using 2 bowls, 20 animals fed over two days. This protocol is the accepted industry standard with the 2 days being used to switch bowls to eliminate any positional bias. This test provides greater sensitivity than standard in-home single bowl trials which require more animals and longer times to determine differences. This format is used in most animal test facilities doing independent commercial trials throughout the country. Similar testing is also done around the world as we have customers using this method to evaluate products in Europe and in Japan.

21. I hereby declare that all statements made herein of my knowledge are true and that all statements made on information and belief are believed to be true and further that the statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under §1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.


Patrick W. Moeller, Ph.D.

January 24, 2007
Date